



DARK ENERGY
SURVEY

Filter and Calibrations Strategy Workshop

- **The Problem:**

- Based upon information we have obtained from vendors, it appears that our technical spec's on the spatial uniformity of the transmissions of the filters and of the coatings on the C1 lens cannot be met.
- Thus, without correction, a star's measured brightness and color will depend on where its image falls on the DECam's focal plane.
- In light of this, it is necessary to investigate how best to correct DECam data for the resulting spatial variations in the system response.



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- Questions to think about:
 - How bad of a spatial non-uniformity in the transmissions can we accept?
 - DES all-sky photometry requirements: 2% (goal 1%)
 - How should we measure these spatial variations in the system response (or, roughly equivalent, in the color terms)?
 - Do the requirements/methodology for the SN survey differ from those for the main survey? (Response curves vs. color terms?)
 - How should we use the system response measurements?
 - How well can we correct for the effects of the spatial non-uniformity with software?
 - How can the SN survey's calibrations help the main survey's (and vice versa)?
 - What observations can we make with the CTIO-1m telescope + DECam chip + (small) DES filters to help us with this problem?
 - When should we have our next meeting?



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- **An important goal:** Setting a time frame for coming to a conclusion, ordering one filter and then ordering the rest
 - What we have in the schedule now is
 - Procure 1st filter : duration 6 months, starts June 16, 2008! ??
 - Evaluate filter for 4 months: December 08 - April 08
 - Procure the rest of the filters: Oct. 2009 (it has to wait for FY09 funding unless we end up with enough contingency to cover it earlier)
 - The guess is that it takes 6 months to procure the filters so they would arrive in April 2010
 - 4 months to put them in them in cells (at UMichigan)
 - 4 more months to test them (at UMichigan)
 - So they arrive at CTIO in Jan. 2011, just after DECam (arrives Dec. 2010)
- One of the deliverables of this workshop should be a plan and schedule for deciding on the filter parameters - then the procurement schedule can be adjusted to match.